DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: BLACK RESERVOIR	Lake Area (ha): 12.14
Town: RINDGE	Maximum depth (m): 1.5
County: Cheshire	Mean depth (m): 0.6
River Basin: Merrimack	Volume (m ³): 67500
Latitude: 42°47'20" N	Relative depth: 0.4
Longitude: 71°58'40" W	Shore configuration: 1.54
Elevation (ft): 1095	Areal water load (m/yr): 56.41
Shore length (m): 1900	Flushing rate (yr^{-1}) : 101.3
Watershed area (ha): 1174.3	P retention coeff.: 0.34
% watershed ponded: 6.5	Lake type: artificial

BIOLOGICAL:	5 February 1991	11 September 1990	
DOM. PHYTOPLANKTON (% TOTAL) #1	DINOBRYON 75%	CHRYSOSPHAERELLA 70%	
#2	TABELLARIA 20%	DINOBRYON 15%	
#3			
PHYTOPLANKTON ABUNDANCE (cells/mL)		3195.0	
CHLOROPHYLL-A (µg/L)		4.95	
DOM. ZOOPLANKTON (% TOTAL) #1	KERATELLA 50%	POLYARTHRA 38%	
#2		NAUPLIUS LARVA 30%	
#3		KERATELLA 16%	
ROTIFERS/LITER	16	229	
MICROCRUSTACEA/LITER	0	142	
ZOOPLANKTON ABUNDANCE (#/L)	20	403	
VASCULAR PLANT ABUNDANCE		Very abundant	
SECCHI DISK TRANSPARENCY (m)		1.5 Visible on bottom	
BOTTOM DISSOLVED OXYGEN (mg/L)	11.2	5.9	
BACTERIA (fecal col., #/100 ml) #1		< 10	
#2			
#3			

SUMMER THERMAL STRATIFICATION:

not stratified

Depth of thermocline (m): None Hypolimnion volume (m^3) : None Anoxic volume (m^3) : None

EMICAL:	Lake: BLACK RESERVOIR Town: RINDGE				
	5 February 1991		11 September 1990		1990
DEPTH (m)	1.0	2.0	1.0		
pH (units)	5.3	5.5	6.1		
A.N.C. (Alkalinity)	0.5	1.5	2.3		
NITRATE NITROGEN	< 0.05	< 0.05	< 0.05		
TOTAL KJELDAHL NITROGEN	0.53	0.56	0.40		
TOTAL PHOSPHORUS	0.008	0.002	0.014		;
CONDUCTIVITY (µmhos/cm)	41.9	43.8	38.1		
APPARENT COLOR (cpu)	50	49	60		
MAGNESIUM			0.48		
CALCIUM			1.9		
SODIUM			3.8		
POTASSIUM			0.40		
CHLORIDE	5	6	6	-	
SULFATE	6	5	4		
TN : TP	66	280	29		
CALCITE SATURATION INDEX			4.6		

All results in mg/L unless indicated otherwise

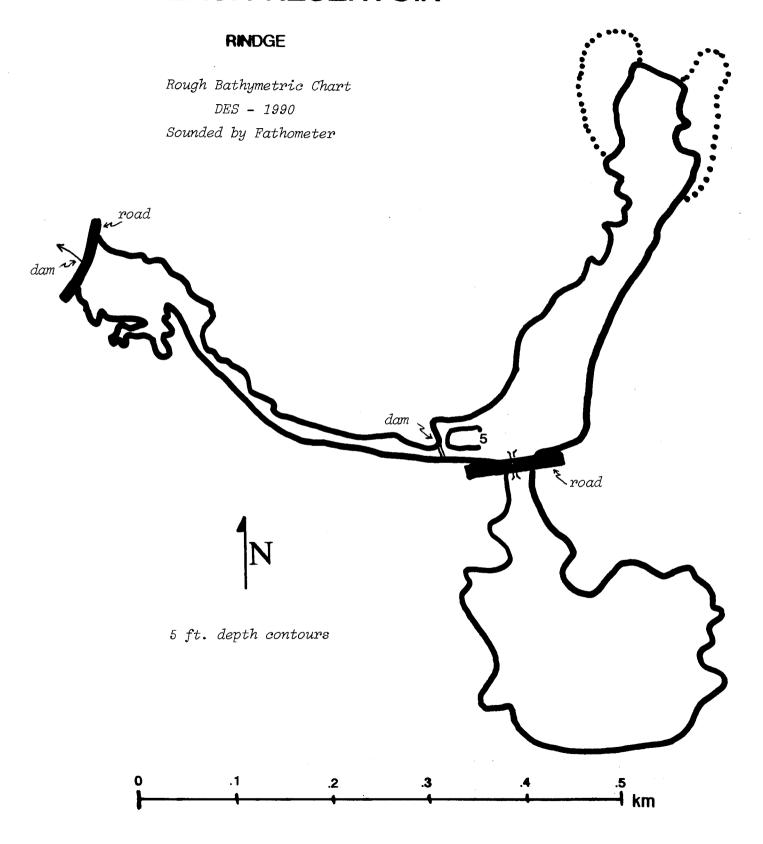
TROPHIC CLASSIFICATION: 1990

•	D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
	**	3	6	1	10	Eutro.

COMMENTS:

- 1. This is a very irregularly-shaped artificial impoundment, having three distinct basins -- northern, southern and western. The road separates the northern and southern basins, and a 3 foot culvert connects the two. Dams are located at the downstream ends of both the northern and western basins.
- 2. No official access; we launched off the road.
- 3. One cottage was present along the northern basin and a house was located near the dam of the same basin.
- 4. Greens were the dominant class of wholewater phytoplankton (85%), with Crucigenia (60%) and Scenedesmus (15%) the dominant genera.

BLACK RESERVOIR



FIELD DATA SHEET

LAKE: BLACK RESERVOIR

DATE: 09/11/90

TOWN: RINDGE

WEATHER:

DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	22.0	8.6	97 %
0.5	19.9	8.4	90 %
1.0	19.0	7.7	82 %
1.5	18.4	5.9	61 %

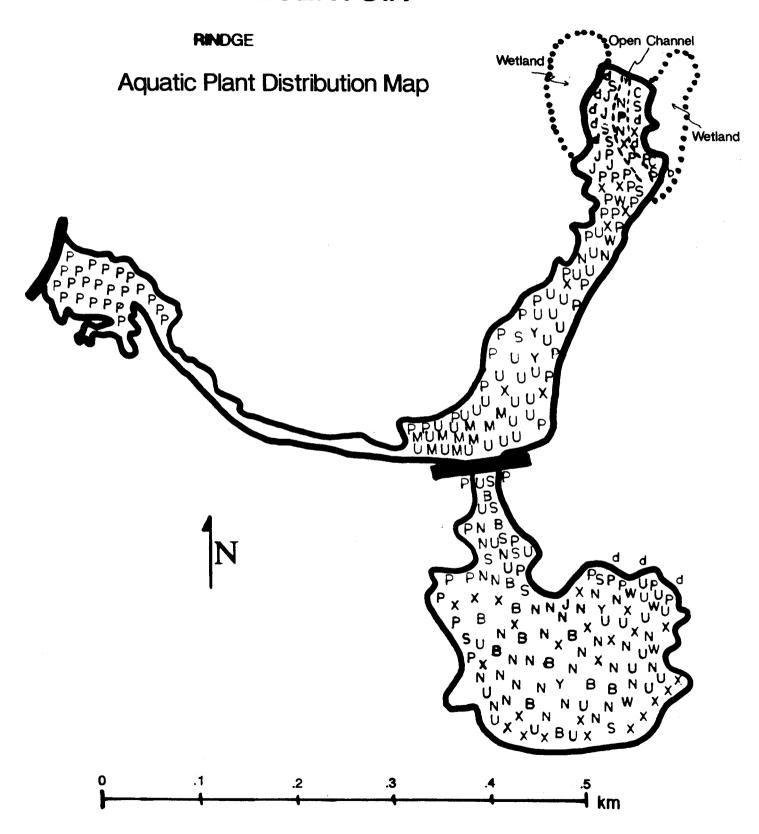
SECCHI DISK (m): 1.5 VOB COMMENTS:

BOTTOM DEPTH (m): 1.5

TIME:

*Dissolved oxygen values are in mg/L

BLACK RESERVOIR



AQUATIC PLANT SURVEY

LAK	E: BLACK RESERVOIR	TOWN: RINDGE	DATE: 09/11/90	
Key	PLANT	NAME	ABUNDANCE	
Key	GENERIC	COMMON		
P	Pontederia cordata	Pickerelweed	Common	
ប	Utricularia	Bladderwort	Abundant	
N	Nymphaea	White water lily	Very abundant	
S	Sparganium	Bur reed	Sparse	
В	Brasenia schreberi	Water shield	Scattered	
W	Potamogeton	Pondweed	Scattered	
M	Myriophyllum	Water milfoil	Scattered	
d	Dulichium arundinaceum	Three-way sedge	Sparse	
f	Chlorophyceae	Filamentous green algae	Sparse	
Y	Nuphar	Yellow water lily	Sparse	
X		Sterile thread-like leaf	Abundant	
J	Juncus	Rush	Sparse	
С	Cephalanthus occidentalis	Buttonbush	Sparse	
b	Scirpus	Bulrush	Sparse	

OVERALL ABUNDANCE: Very abundant

GENERAL OBSERVATIONS:

- 1. This is a very shallow impoundment with very abundant plant growth. The western basin was non-navigable because of dense pickerelweed growth.
- 2. Mats of bladderwort and milfoil had accumulated at the dam of the northern basin.